

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020

Subject Code:2170401

Date:19/01/2021

Subject Name:Enzymes and Proteins

Time:10:30 AM TO 12:30 PM

Total Marks: 56

Instructions:

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
<b>Q.1</b> (a) Explain the role of entropy in catalysis of enzyme.	<b>03</b>
(b) Explain about specificity of enzymes.	<b>04</b>
(c) Explain the method of classification of enzyme.	<b>07</b>
<b>Q.2</b> (a) Discuss the significance of $V_{max}$ .	<b>03</b>
(b) Explain features and working of active site.	<b>04</b>
(c) Compare different plots and modifications used to overcome limitations of Michealis-Menten plot with equation.	<b>07</b>
<b>Q.3</b> (a) What do you mean by enthalpy, entropy and free energy.	<b>03</b>
(b) Write Michaelis-Menten equation & Write assumptions for derivation of Michaelis-Menten equation.	<b>04</b>
(c) Explain the concept of standard free energy.	<b>07</b>
<b>Q.4</b> (a) Write a note on Sangers method for sequencing genes.	<b>03</b>
(b) What are various features of protein protein interface?	<b>04</b>
(c) Discuss in detail about the factors that affect the rate of chemical reaction.	<b>07</b>
<b>Q.5</b> (a) Which method can give the highest resolution of protein structure? Write a brief note about the same.	<b>03</b>
(b) Compare NMR and X-Ray crystallography as protein structure tools.	<b>04</b>
(c) Write a note on CD-Spectroscopy, Maldi-Tof and at least one method for understanding protein primary structure.	<b>07</b>

- Q.6** (a) Write note with examples on enzymes from plant source , animal source and microbial source. **03**
- (b) Write a note about commercial applications of enzymes in at least two different industries. **04**
- (c) Write a note on allosteric activation and inhibition as a means for control of protein activity. **07**
- Q.7** (a) Define enzyme activity, effectiveness factor and domains. **03**
- (b) What is Anfinsen's hypothesis? How it was demonstrated? **04**
- (c) Write a note on enzyme immobilization. **07**
- Q.8** (a) Effect of denaturants on protein structure. **03**
- (b) How folding funnels describe folding phenomenon? **04**
- (c) Explain GroEL GroES system and its function. **07**

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